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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|-----------------------|----------------------|------------------|
| 09/828,869 | 04/10/2001 | Joseph B. Weinman JR. | 03493.00122 | 7844 |
| 7590 | 11/26/2004 | | EXAMINER | |
| Mr. S. H. Dworetsky AT&T Corp. P.O. Box 4110 Middletown, NJ 07748 | | | PEREZ DAPLE, AARON C | |
| | | ART UNIT | PAPER NUMBER | 2154 |

DATE MAILED: 11/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/828,869 | WEINMAN, JOSEPH B. |
| | Examiner | Art Unit |
| | Aaron C Perez-Daple | 2154 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 09 July 2001.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 14-21 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-13 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>7/9/01</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Action is in response to Application filed 4/10/01.
2. Claims 1-21 are presented for examination.
3. This Action is non-Final.

Election/Restrictions

4. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-13, drawn to a data mirroring system and method, classified in class 709, subclass 217.
 - II. Claims 14-21, drawn to a wide-area cascade system and method, classified in class 709, subclass 213.
5. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as in a network which does not comprise a relay chain and lacking one or more particulars of invention II. Invention II has a separate utility such as in a network which does not comprise a disk array controller and lacking one or more particulars of invention I. See MPEP § 806.05(d).
6. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
7. Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

8. During a telephone conversation with Ross Danenberg on 11/23/04 a provisional election was made without traverse to prosecute the invention of a data mirroring system, claims 1-13. Affirmation of this election must be made by applicant in replying to this Office action. Claim 14-21 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. **Claims 10-13** are rejected under 35 U.S.C. 102(e) as being anticipated by Dion et al. (US 6,163,856) (hereinafter Dion).

11. As for claim 10, Dion discloses a method of data mirroring to insure the continuity of data, said method comprising the steps of:

- (i) receiving a data write request at a primary mirror controller (col. 5, lines 13-15; step 2.1, Fig. 2);
- (ii) sending the data write request to each of at least two remote mirror sites (col. 5, lines 15-24; col. 16, line 65 – col. 17, line 9);

- (iii) receiving an acknowledgement message (ACK) from each remote mirror site, wherein each ACK comprises information that the data write request has been received and executed by the remote mirror site for which the ACK corresponds (col. 15, lines 27-36); and
- (iv) sending an ACK that the data write request has been completed (col. 15, lines 53-60).
12. As for claim 11, Dion discloses the method of claim 10, wherein each of said remote mirror sites is adapted to write the data write request to a cache (cache 152, Fig. 2) and to a remote storage means (disk 142, Fig. 2; col. 9, lines 1-22).
13. As for claim 12, Dion discloses the method of claim 10, further comprising the steps of:
- (v) upon completion of step (i), writing the data write request to a cache connected to the primary mirror controller (col. 5, lines 42-47; cache 130, Fig. 2); and
- (vi) upon the completion of step (iii), removing the data write request from the cache connected to the mirror controller (col. 15, lines 37-43).
14. As for claim 13, Dion discloses the method of claim 10, further comprising the steps of:
- (v) detecting an interruption of service by the primary mirror controller (col. 5, lines 48-67);
- (vi) switching to a secondary mirror controller (col. 5, lines 48-67);
- (vii) performing steps (i)-(iv) substituting the secondary mirror controller in place of the primary mirror controller (col. 5, lines 48-67).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. **Claims 1-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Dion in view of McKean et al. (US 6,67,387 B1) (hereinafter McKean).

17. As for claim 1, Dion discloses a data mirroring system, comprising:

a local site at a first location comprising:

a server (local server 122, Fig. 2); and

a mirror controller (Telescope 160, Fig. 2; col. 9, lines 23-55); and

at least two remote mirror sites (exemplary remote site 140, Fig. 2), each at different geographic locations, wherein each location is other than the first location (col. 6, line 55 – col. 7, line 8), and wherein each remote mirror site comprises:

means for storing data (disk 142, Fig. 2);

wherein said local site is communicatively coupled to each remote mirror site (col. 6, line 55 – col. 7, line 8; Fig. 2).

Although Dion teaches that a wide variety of memory devices may be used, including disk clusters (col. 8, lines 59-62), Dion does not specifically disclose using a disk array controller. McKean teaches the use of a disk array controller for the purpose of managing of a storage area network for storing large amounts of data (col. 1, lines 28-44). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Dion by using a disk array controller in order to manage a storage area network for storing large amounts of data, as taught by Dion above.

18. As for claim 2, Dion discloses the system of claim 1, wherein each of said at least two remote mirror sites further comprise a cache (cache 152, Fig. 2).
19. As for claim 3, Dion does not specifically disclose that the local site may further comprise a storage area network (SAN). McKean teaches the use of a SAN for storing large amounts of data (col. 1, lines 28-44). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Dion by using a SAN at the local site in order to increase the amount of data storage, as taught by Dion above.
20. As for claim 4, Dion discloses the system of claim 1, the local site further comprising:
 - a cache (cache 130, Fig. 2); and
 - means for storing data (disk 126, Fig. 2).
21. As for claim 5, Dion discloses the system of claim 1, wherein at least one of said at least two remote sites is geographically displaced at least twenty-five miles from the local site (col. 3, lines 5-8; col. 6, lines 55-60).
22. As for claim 6, Dion discloses the system of claim 1, wherein said at least two remote sites further comprising exactly two remote sites (col. 6, line 55 – col. 7, line 8).
23. As for claim 7, Dion discloses the system of claim 6, wherein said remote sites are substantially diametrically opposed to each other, and said remote sites are geographically located at least approximately 25 miles apart (col. 3, lines 5-8; col. 6, line 55 – col. 7, line 8).
24. As for claim 8, Dion discloses the system of claim 1, further comprised of:
 - a backup site (remote site, Fig. 2) comprising a backup mirror controller (telescope 160R, Fig. 2) and a backup server (remote server 140, Fig. 2), and adapted to being operational when the local site ceases normal functions (Fig. 2).

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25. As for claim 9, Dion discloses the system of claim 8, said backup site further comprising:
a cache (cache 152, Fig. 2); and
a means for data storage (disk 142, Fig. 2).

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 5,799,141, note Figs. 3 & 4B;

US 5,513,314, note abstract;

US 6,243,719 B1, note abstract;

US 6,389,552 B1, note abstract.

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron C Perez-Daple whose telephone number is (571) 272-3974. The examiner can normally be reached on 9am-5pm.

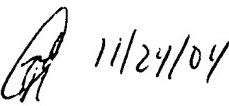
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access

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to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197
(toll-free).


11/24/04

Aaron Perez-Daple

